

Docket No.: 418268782US  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Gavrilescu et al.

Application No.: 09/681,488

Confirmation No.: 3974

Filed: April 16, 2001

Art Unit: 2157

For: WEB SITE COBROWSING

Examiner: A. M. Gold

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**RESPONSE TO NOTIFICATION OF NON-COMPLIANCE**

MS Appeal Briefs - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Response is submitted in answer to the Notification of Non-Compliant Appeal Brief (37 C.F.R. 41.37) dated November 15, 2006 in the above-identified matter currently on appeal. In the Notification, under Items 2 and 4, the Examiner stated that the brief does not (1) contain a statement of the status of all claims, or does not identify the appealed claims; and (2) contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters; or fails to identify each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function; and/or set forth the structure material or acts described in the specification as corresponding to each claimed function with reference to

the specification by page and line number, and to the drawings by reference character, respectively.

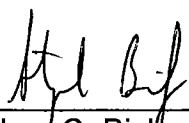
The undersigned thanks the Examiner for the courtesy of a telephone conversation on December 18, 2006, in which the Examiner clarified the reason for the notification of non-compliance. Specifically, the Examiner requested support for the proposition that some, but not all, of the claims may be appealed in an appeal. Appellants refer the Examiner to 37 CFR § 41.31(c), 37 CFR § 41.37(c)(1)(iii) and related section MPEP 1205.02. Section 41.31(c) notes that the appellant may appeal "all claims under rejection which the applicant or owner proposes to contest," and section 41.37(c)(1)(iii) requires that the appellant identify "those claims that are being appealed." By allowing the appellant to contest only certain rejected claims and requiring the appellant to identify those claims that are on appeal, the regulation expressly leaves open the option that the appellant may not appeal some of the pending claims. Indeed, if all claims were required to be appealed, appellants submit that the regulation would indicate that all claims must be appealed and not give the appellant the option to identify those on appeal. As further support for this proposition, appellants point to the following recent decisions from the Board of Patent Appeals and Interferences where appeals were allowed on only a portion of the pending claims: *Ex parte Brasz et al.*, Appeal No. 2006-1959, Application No. 10/293,711 (8 Jan 2007); *Ex parte Leber et al.*, Appeal No. 2006-3138, Application No. 09/683,351 (15 Dec 2006).

The undersigned also appreciates the Examiner's comments on how to remedy the fact that copies of the application currently in appellants' possession have inconsistent line and page numbers. A copy of the application as downloaded from the Office's PAIR system has now been attached to the Amended Appeal Brief in an APPLICATION APPENDIX. The copy of the application has been updated to include line numbers, which have been appropriately referenced throughout the Amended Appeal Brief. No other changes have been made to the application.

It is believed that the authorities cited in this Response and the changes made to the Appeal Brief address the concerns of the Examiner raised in the Notification of Non-Compliant Appeal Brief, and appellants therefore respectfully submit the Amended Appeal Brief for reconsideration by the Examiner.

Dated: January 29, 2007

Respectfully submitted,

By   
\_\_\_\_\_  
Stephen C. Bishop  
Registration No.: 38,829  
PERKINS COIE LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
(206) 359-3129  
(206) 359-7198 (Fax)  
Attorneys for Appellants

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**AMENDED APPEAL BRIEF**

MS Appeal Briefs - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Amended Appeal Brief is submitted in response to the Notification of Non-Compliant Appeal Brief (37 C.F.R. 41.37) dated November 15, 2006 in the above-identified matter currently on appeal. The appellants have briefed the issues raised by the Examiner in a "Response to Notification of Non-Compliance" that is submitted concurrently with this Amended Appeal Brief. The appellants have also amended the originally-filed brief to include a copy of the pending application as downloaded from the Office's PAIR system in the attached APPLICATION APPENDIX. The copy of the application has been updated to include line numbers, which have been appropriately referenced throughout this Amended Appeal Brief. It is believed that the changes made to the Appeal Brief address the concerns of the Examiner, and appellants therefore respectfully submit this Amended Appeal Brief for reconsideration by the Examiner.

This amended brief is in furtherance of the Notice of Appeal in this application filed on September 23, 2005. The fees required under 37 C.F.R. § 41.20(b)(2), and any required petition for extension of time for filing and associated fees, were paid on August 14, 2006 concurrently with the Appeal Brief of the same date. This Amended Appeal Brief is submitted with an extension of time for filing and associated fees. As a result, appellants believe no additional fee is due. However, the Commissioner is authorized to charge any deficiency in the fees filed, asserted to be filed, or which should have been filed herewith to our Deposit Account No. 50-0665, under Order No. 418268771US.

This amended brief contains items under the following headings as required by 37 C.F.R. § 41.37. The complete Table of Contents follows.

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Microsoft Corporation, which is the assignee of record.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellants, appellants' legal representative, and the real party in interest are unaware of any related appeals, interferences, or judicial proceedings that may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the present appeal.

Appellants note that a related case, divisional application Serial No. 10/975,612, is still pending at the Office.

III. STATUS OF CLAIMS

Claims 1-37 are currently pending in this application. These claims stand rejected under 35 U.S.C. § 103(a).

Claims 1-36 are the subject of the present appeal. The text of these claims is attached hereto as Appendix A. Appellants are not appealing the rejection of claim 37 at this time to simplify the issues on appeal.<sup>1</sup>

IV. STATUS OF AMENDMENTS

Appellants have made no amendments subsequent to the final rejection of May 27, 2005 (hereinafter referred to as the "Final Office Action").

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<sup>1</sup> Appellants reserve the right to pursue this claim in a continuing application.



## V. SUMMARY OF CLAIMED SUBJECT MATTER

### A. Overview of the Invention<sup>2</sup>

Cobrowsing is a term used to describe an experience wherein one user that is browsing a web page with his or her web browser allows other users to view the same web page on their own web browsers. (Page 1, lines 32-52; page 6, lines 10-29.) That is, when a first user performs an action in a browser during a cobrowsing session, e.g., by loading a web page, scrolling the web page, navigating to a link in the web page, etc., other users will see the same action on their own web browsers. Appellants' claimed invention relates to a technology that enables multiple client computers to establish a cobrowsing web session with one another. (Page 3, lines 15-27.) When a user of a first client performs actions in a browser during a cobrowsing web session, e.g., by scrolling a web page (page 4, lines 8-21; page 7, lines 15-37), loading a web page (page 6, line 51 – page 7, line 13), highlighting a portion of a web page (page 4, lines 8-21; page 8, line 50–page 9, line 15), etc., other cobrowsing clients perform similar actions so that users of the cobrowsing clients can see the same actions on the web page as the first client. To ensure that the cobrowsing clients reflect the same results as the first client, synchronization messages are sent between the multiple client computers. (Page 3, line 15 through page 4, line 7; page 6, line 31 through page 7, line 13; page 10, lines 39-51; Figure 2 blocks 206, 208.) One of the components of the synchronization message can be a cookie that is associated with a web page. (Page 13, lines 24-35; page 14, lines 12-16 [XML schema]; page 14, line 18 through page 15, line 39.) Because each of the cobrowsing clients may access a particular web site with a copy of the same cookie, each of the clients is able to view the same web page. (Page 13, lines 24-35; page 14, line 18 through page 15, line 39.) The "sharing of cookies" is only necessary for those web pages that are customized based on a cookie. (Page 13, lines 24-35.)

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<sup>2</sup> Copies of the application currently in appellants' possession have inconsistent line and page numbers. For the convenience of the Board, appellants have therefore downloaded a copy of the application from the Office's Public PAIR system and added line numbers to the copy. The application with line numbers is attached to this appeal brief in the APPLICATION APPENDIX. No other changes have been made to the application other than to add line numbers.

B. Independent Claims on Appeal

The rejected independent claims are directed to technology that enables multiple client computers to establish a cobrowsing web session with one another. The independent claims are described as follows:

1. Claim 1

Claim 1 is directed to a method for a first user to cobrowse a web site with a second user. See, e.g., page 3, lines 15-27. A cobrowsing session of a web site is initiated between the first user using a first client and a second user using a second client. See, e.g., page 6, lines 31-49; Figure 2 block 202. A synchronization message is sent from the first client to the second client. See, e.g., page 6, line 31 through page 7, line 13; page 10, lines 39-51; Figure 2 blocks 206-208. The synchronization message includes an indication of a cookie of the web site, wherein the cobrowsing uses the indication of the cookie to access the web site. See, e.g., page 13, lines 24-35; page 14, lines 12-16 (XML schema); page 14, line 18 through page 15, line 39.

2. Claim 23

Claim 23 is directed to a computer-readable medium having a computer program stored thereon that allows a first user to cobrowse a web site with a second user when executed on a processor. See, e.g., page 3, lines 15-27. A cobrowsing session of a web site is initiated between a first client of the first user and a second client of the second user. See, e.g., page 6, lines 31-49; Figure 2 block 202. A synchronization message is sent from the first client to the second client. See, e.g., page 6, line 31 through page 7, line 13; page 10, lines 39-51; Figure 2 blocks 206-208. The synchronization message includes at least one command comprising an indication of a cookie of the web site, wherein the second client cobrowses the web site using the indication of the cookie to access the web site. See, e.g., page 13, lines 24-35; page 14, lines 12-16 [XML schema]; page 14, line 18 through page 15, line 39.

### 3. Claim 30

Claim 30 is directed to a computer-readable medium having a computer program stored thereon that allows a second user to cobrowse a web site with a first user when executed on a processor. See, e.g., page 3, lines 15-27. A cobrowsing session of a web site is initiated between a first client of the first user and a second client of the second user. See, e.g., page 6, lines 31-49; Figure 2 block 202. A synchronization message is received by the second client from the first client. See, e.g., page 6, line 31 through page 7, line 13; page 10, lines 39-51; Figure 2 blocks 206-208. The synchronization message includes at least one command comprising an indication of a cookie, wherein the second client cobrowses the web site using the indication of the cookie when cobrowsing. See, e.g., page 13, lines 24-35; page 14, lines 12-16 (XML schema); page 14, line 18 through page 15, line 39.

## VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

### A. The Examiner's Rejections

The Examiner has rejected all of the pending claims pursuant to 35 U.S.C. § 103(a) on the following bases:

1. The Examiner has rejected claims 1-3, 5-8, 10-13, 15, and 17-36 of the application over U.S. Patent No. 6,240,444 to Fin et al., in view of U.S. Patent No. 6,675,216 to Quatrano et al.

2. The Examiner has rejected claims 4 and 14 as being unpatentable over Quatrano in view of U.S. Patent No. 6,564,261 to Gudjonsson et al.

3. The Examiner has rejected claims 9 and 37 as being unpatentable over Fin and Quatrano in view of U.S. Patent No. 6,535,912 to Anupam et al.

4. The Examiner has rejected claim 16 as being unpatentable over Fin and Quatrano in view of U.S. Patent No. 6,006,253 to Kumar et al.

B. The Issues on Appeal

The sole issue on appeal is whether the applied references teach or suggest the sharing of a cookie between two clients for purposes of using the cookie to implement a cobrowsing session of a web site. The decision on this issue impacts pending claims 1-36.

VII. ARGUMENT

All of the pending claims have been rejected by the Examiner under 35 U.S.C. § 103(a) based on a combination of U.S. Patent No. 6,240,444 to Fin et al. (hereinafter "Fin") and U.S. Patent No. 6,675,216 to Quatrano et al. (hereinafter "Quatrano"), either alone or in combination with other references. Prior to distinguishing appellants' technology, a brief description of the Fin and the Quatrano references will be provided. As will be appreciated from the description, the Fin and Quatrano references disclose substantially different technologies to enable cobrowsing between multiple clients than the technology claimed by appellants.

A. The Fin Reference

As depicted in Figure 13, the Fin reference is directed to a web page sharing system. In the example depicted in Figure 13, a customer 1310 using a web browser 150 on a first computer is able to view the same application form 1350 as a bank agent 1320 using a web browser on a second computer. (Fin 19:34-53.) As depicted in Figure 1A, cobrowsing is dependent upon a CCI redirector 145 and a message redirector 155 that shares CCI events (e.g., browser requests) and messages (e.g., keyboard input, operating system messages, and application messages) between more than one client. (See Fin 5:59–6:11.) As the Examiner indicates, however, "Fin fails to teach . . . the use of a cookie of the web site" that is being cobrowsed. (Final Office Action, page 3.)

B. The Quatrano Reference

The Quatrano reference is directed to a copy server for collaboration. (Quatrano 1:63-2:6.) As depicted in Figure 1, a first client using a user browser 14 can access and

receive content from a content server 12, such as dynamic content that is generated by an application server 16. (*Id.* 3:3-17.) Copies of content accessed by the user browser 14 are stored in a copy server 24 as a copied page 28. (*Id.* 3:29-35.) Other clients, such as an agent browser 42, desiring to view the same content in a cobrowsing environment have direct access to the copied page 28 by communicating directly with the copy server 24. (*Id.* 3:61-67.) In this environment, cookies are not required for the agent browser 42 to see the same content as the user browser 14 because both the agent browser and the user browser are accessing the same copied page 28 on the copy server 24. Accessing the same stored content enables cobrowsing of the copied page to occur, even though the web page being viewed may have been dynamically created by the application server 16 for the user browser 14.

Quatrano describes the use of cookies in two contexts. In one context, Quatrano discloses a scheme to control access to the copied page 28 by distributing a unique cookie from the copy server 24 to the agent browser 42 and a different unique cookie from the copy server 24 to the user browser 14. (*Id.* 4:40-52.) Cookies distributed in this fashion are not used by the application server 16 to generate web pages, but instead are used by the system as a security mechanism to control access. (*Id.* 4:50-52.) In a second context, Quatrano discloses a bypass technique to allow a requesting browser 14 or 42 to directly communicate with the application server 16 in order to receive "cookies and other header information" directly from the application server. (*Id.* 5:12-17.) Cookies received in this fashion are not being shared between browsers 14 and 42, and cookies are not being copied for accessing the application server 16.

C. Fin and Quatrano Do Not Disclose Cobrowsing Using a Shared Cookie

All of the pending independent claims recite sharing an indication of a cookie between clients for purposes of cobrowsing. For example, claim 1 provides for a synchronization message "indicating at least one command comprising an indication of a

cookie of the web site" wherein "the indication of the cookie [is used] to access the web site." Claims 23 and 30 contain similar limitations.

None of the cited references discloses sharing an indication of a cookie for purposes of enabling access to a web site that is being cobrowsed. The Examiner relies upon the Fin reference to generally disclose technology to allow multiple users to share the same HTML page on the Internet. (Final Office Action, page 2.) The Examiner recognizes, however, that Fin fails to teach a limitation to use a cookie of the web site, and relies on Quatrano as a reference that discloses "the use of cookies...transmitted between collaborative computing devices." (Final Office Action, page 3.) The Examiner argues that it would have been obvious to one of ordinary skill in the art to modify Fin in view of Quatrano to use a cookie from a web site when cobrowsing, as doing so would "ensure that the user of the second client is seeing the same web pages as the user of the first client." (Final Office Action, pages 3-4.) Contrary to the Examiner's assertion, appellants believe that Quatrano fails to disclose or suggest an architecture that shares cookies in the manner disclosed by appellants, and that Fin and Quatrano either singly or together fail to disclose all elements of appellants' claimed system.

As previously discussed, Quatrano utilizes a copy server to store a web page for viewing by multiple clients. The copy server maintains a copy of a web page that was served to a first client, and allows other clients to view the same page by virtue of allowing them access to the copy. Because all clients view the same web page served by the copy server, there is no need for the system disclosed in Quatrano to share cookies between the first client and the other clients. Although an application server that generates an initial copy of a web page may rely upon a cookie contained within a first client's browser to generate the page, once the page is stored in the copy server all subsequent clients viewing the page are not required to have a cookie since the page is not being regenerated by the application server. Quatrano and Fin do not disclose the sharing of an indication of cookies between clients for cobrowsing, nor do they teach the need to share an indication of cookies between clients for cobrowsing.

Moreover, what little discussion there is of cookies in Quatrano does not suggest a sharing of cookies in the manner claimed by appellants. Quatrano identifies two uses of cookies. The first use is for the copy server to distribute unique cookies to agent and user browsers so that the cookies may be used as a means to control access to who may view a copied page in the copy server. The distribution of a unique cookie by a server to each client for purposes of access control is different from appellants' claimed invention because: (1) appellants' clients share an indication of the same cookie, and do not each have a unique cookie; and (2) appellants share the indication of the cookie between clients, not from a server to a client. The second use of the cookies in Quatrano is in a "pass through" mode wherein cookies may be distributed from the application server directly to all participants' browsers. That is, the application server 16 may pass cookies directly to the user browser 14 or the agent browser 42 without having copies of the cookies stored in the copy server 24. When the participant's browser subsequently sends a request to the application server, the request includes the cookies. The response to the request includes a web page that is stored in the copy server 24. Another participant can access the web page at the copy server 24 and does not need the same cookies as the participant. In this pass through mode of operation, cookies are therefore distributed directly by the application server and not between the clients as claimed by appellants. Quatrano therefore does not disclose in its discussion of cookies the sending of a synchronization message between clients containing an indication of a cookie, nor does it teach a need to share an indication of a cookie between clients.

D. Obviousness Rejections Over Fin and Quatrano (Claims 1-3, 5-8, 10-13, 15, and 17-36)

Independent claims 1, 23, and 30, as well as claims 2-3, 5-8, 10-13, 15, 17-22, 24-29, 31-36 by virtue of their dependency, include the recitation of an indication of a cookie being shared in a synchronization message for purposes of enabling access to a web site being cobrowsed. Specifically, claim 1 provides for a synchronization message "indicating at least one command comprising an indication of a cookie of the web site" wherein "the indication of the cookie [is used] to access the web site." Claim 23 provides for a

synchronization message "indicating at least one command comprising an indication of a cookie of the web site" wherein "the indication of the cookie [is used] when accessing the web site." Claim 30 provides for a synchronization message "indicating at least one command comprising an indication of a cookie" wherein the "indication of the cookie [is used] when cobrowsing." These claims should not be rejected because the combination of Fin and Quatrano does not teach or suggest sending a synchronization message between clients containing a cookie, and using the cookie to implement a cobrowsing session, as explained above in Section C.

E. Obviousness Rejections Over Fin, Quatrano, and Gudjonsson (Claims 4 and 14)

Claims 4 and 14 depend from independent claim 1, and contain the recitation in that claim of an indication of a cookie being shared in a synchronization message for purposes of enabling access to a web site being cobrowsed. For the reasons set forth in Sections C and D above, these claims should be allowed.

F. Obviousness Rejections Over Fin, Quatrano, and Anupam (Claim 9)

Claim 9 depends from independent claim 1, and contains the recitation in that claim of an indication of a cookie being shared in a synchronization message for purposes of enabling access to a web site being cobrowsed. For the reasons set forth in Sections C and D above, this claim should be allowed.

G. Obviousness Rejections Over Fin, Quatrano, and Kumar (Claim 16)

Claim 16 depends from independent claim 1, and contains the recitation in that claim of an indication of a cookie being shared in a synchronization message for purposes of enabling access to a web site being cobrowsed. For the reasons set forth in Sections C and D above, this claim should be allowed.

VIII. Summary

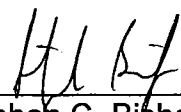
Appellants respectfully submit that the Examiner has failed to identify a combination of references that contains all of appellants' claim limitations. The Examiner has failed to show that Fin or Quatrano, either alone or in combination, discloses or suggests sending a



synchronization message containing an indication of a cookie between clients to allow the clients to access and cobrowse a particular web site. Accordingly, appellants respectfully request reversal of the Examiner's rejections to claims 1-36.

Dated: 29 January, 2007

Respectfully submitted,

By   
Stephen C. Bishop  
Registration No.: 38,829  
PERKINS COIE LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
(206) 359-3129  
(206) 359-7198 (Fax)  
Attorneys for Appellants

**CLAIMS APPENDIX**

**Claims Involved in the Appeal of Application Serial No. 09/681,488**

1. (Previously Presented) A method for a first user to cobrowse a plurality of pages formatted according to one or more markup languages and organized into one or more web sites with a second user comprising:
  - initiating a cobrowsing session between a first client of the first user and a second client of the second user;
  - browsing a web site on the first client by the first user;
  - sending a synchronization message by the first client to the second client, the synchronization message indicating at least one command comprising an indication of a cookie of the web site;
  - receiving the synchronization message by the second client; and
  - cobrowsing the web site on the second client by the second user in accordance with the synchronization message, wherein the cobrowsing uses the indication of the cookie to access the web site.
2. (Original) The method of claim 1, further comprising repeating browsing on the first client, sending the synchronization message by the first client, receiving the synchronization message by the second client, and cobrowsing on the second client until the cobrowsing session is terminated.
3. (Original) The method of claim 1, wherein initiating the cobrowsing session between the first client of the first user and the second client of the second user is in accordance with a preexisting protocol.
4. (Original) The method of claim 3, wherein the preexisting protocol is the Session Initiation Protocol (SIP).

5. (Original) The method of claim 1, wherein browsing the web site on the first client by the first user comprises browsing a new page of the web site, such that the synchronization message indicates the current page being navigated as the new page.

6. (Original) The method of claim 5, wherein cobrowsing the web site on the second client by the second user comprises opening a new browser window for the current page where no other browser window is open for the cobrowsing session on the second client.

7. (Original) The method of claim 1, wherein browsing of the web site on the first client by the first user comprises scrolling within the current page at least one of vertically and horizontally such that the current relative position on the current page being navigated and viewed is changed, such that the synchronization message indicates the current relative position as changed, causing cobrowsing the web site on the second client by the second user to correspondingly scroll within the current page.

8. (Original) The method of claim 7, wherein the current relative position on the current page being navigated is indicated in accordance with a preexisting model specifying page layout.

9. (Original) The method of claim 8, wherein the preexisting model is the Document Object Model (DOM).

10. (Original) The method of claim 1, wherein the group of commands further comprises a portion of the current page being highlighted by the first user on the first client, such that the synchronization message indicates the portion of the current page being highlighted, causing cobrowsing the web site on the second client by the second user to correspondingly highlight the portion of the current page.

11. (Original) The method of claim 1, wherein the group of commands further comprises a change of focus from a first browser window to a second browser window by the first user on the first client, such that the synchronization message indicates the change of focus, causing cobrowsing the web site on the second client by the second user to correspondingly change focus from a first browser window on the second client to a second browser window of the second client.

12. (Original) The method of claim 1, wherein the group of commands further comprises a resizing of a browser window by the first user on the first client, such that the synchronization message indicates the resizing, causing cobrowsing the web site on the second client by the second user to correspondingly resize a browser window on the second client.

13. (Original) The method of claim 1, wherein sending the synchronization message and receiving the synchronization message are received in accordance with a preexisting protocol.

14. (Original) The method of claim 13, wherein the preexisting protocol is one of: the Session Initiation Protocol (SIP), and the Transmission Control Protocol/Internet Protocol (TCP/IP).

15. (Original) The method of claim 1, wherein the synchronization message is formatted in accordance with an extension to a preexisting protocol.

16. (Original) The method of claim 15, wherein the preexisting protocol is the Session Description Protocol (SDP).

17. (Original) The method of claim 1, further comprising terminating the cobrowsing session.

18. (Original) The method of claim 1, further comprising passing control of the cobrowsing session from the first client of the first user to the second client of the second user.

19. (Original) The method of claim 18, wherein the group of commands further comprises a transfer of control of the cobrowsing session from the first client to the second client, such that the synchronization message indicates the transfer of control.

20. (Original) The method of claim 18, wherein the group of commands further comprises a request to obtain control of the cobrowsing session by the second client from the first client, such that the synchronization message indicates the request to obtain control.

21. (Original) The method of claim 18, further comprising:  
browsing a web site on the second client by the second user;  
sending a synchronization message by the second client to the first client, the synchronization message indicating at least one command selected from the group of commands comprising: a current page of the web site being browsed on the second client by the second user and a current relative position on the current page being navigated and viewed by the second user on the second client;  
receiving the synchronization message by the first client; and,  
cobrowsing the web site on the first client by the first user in accordance with the synchronization message.

22. (Original) The method of claim 21, further comprising repeating browsing on the second client, sending the synchronization message by the second client, receiving the synchronization message by the first client, and cobrowsing on the first client until the cobrowsing session is terminated.

23. (Previously Presented) A computer-readable medium having a computer program stored thereon for execution by a processor of a first client to perform a method for a first user to cobrowse a plurality of pages formatted according to one or more markup languages and organized into one or more web sites with a second user, the method comprising:

- initiating a cobrowsing session between the first client of the first user and a second client of the second user;
- browsing a web site on the first client by the first user; and
- sending a synchronization message by the first client to the second client, the synchronization message indicating at least one command comprising an indication of a cookie of the web site, wherein the second client receives the synchronization message and cobrowses the web site in accordance with the synchronization message and uses the indication of the cookie when accessing the web site.

24. (Original) The medium of claim 23, wherein the method further comprises repeating browsing the web site and sending the synchronization message until the cobrowsing session is terminated.

25. (Original) The medium of claim 23, wherein browsing the web site on the first client by the first user comprises browsing a new page of the web site, such that the synchronization message indicates the current page being navigated as the new page.

26. (Original) The medium of claim 23, wherein browsing of the web site on the first client by the first user comprises scrolling within the current page at least one of vertically and horizontally such that the current relative position on the current page being navigated and viewed is changed, such that the synchronization message indicates the current relative position as changed, causing cobrowsing the web site on the second client by the second user to correspondingly scroll within the current page.

27. (Original) The medium of claim 23, wherein the group of commands further comprises a portion of the current page being highlighted by the first user on the first client, such that the synchronization message indicates the portion of the current page being highlighted, causing cobrowsing the web site on the second client by the second user to correspondingly highlight the portion of the current page.

28. (Original) The medium of claim 23, wherein the group of commands further comprises a change of focus from a first browser window to a second browser window by the first user on the first client, such that the synchronization message indicates the change of focus, causing cobrowsing the web site on the second client by the second user to correspondingly change focus from a first browser window on the second client to a second browser window of the second client.

29. (Original) The medium of claim 23, wherein the group of commands further comprises a resizing of a browser window by the first user on the first client, such that the synchronization message indicates the resizing, causing cobrowsing the web site on the second client by the second user to correspondingly resize a browser window on the second client.

30. (Previously Presented) A computer-readable medium having a computer program stored thereon for execution by a processor of a second client to perform a method for a second user to cobrowse a plurality of pages formatted according to one or more markup languages and organized into one or more web sites with a first user, the method comprising:

initiating a cobrowsing session between a first client of the first user and the second client of the second user;

receiving a synchronization message by the second client from the first client, the synchronization message indicating at least one command comprising an indication of a cookie; and

cobrowsing the web site on the second client by the second user in accordance with the synchronization message and using the indication of the cookie when cobrowsing.

31. (Original) The medium of claim 30, wherein the method further comprises repeating receiving the synchronization message and cobrowsing the web site until the cobrowsing session is terminated.

32. (Original) The medium of claim 30, wherein the first user browses a new page of the web site on the first client, such that the synchronization message indicates the current page being navigated as the new page, and cobrowsing the web site comprises cobrowsing the new page.

33. (Original) The medium of claim 30, wherein the first user scrolls within the current page at least one of vertically and horizontally on the first client such that the current relative position on the current page being navigated and viewed is changed, such that the synchronization message indicates the current relative position as changed, and cobrowsing the web site comprises correspondingly scrolling within the current page.

34. (Original) The medium of claim 30, wherein the first user highlights a portion of the current page on the first client and the group of commands further comprises the portion of the current page being highlighted by the first user on the first client, such that the synchronization message indicates the portion of the current page being highlighted and cobrowsing the web site comprises correspondingly highlighting the portion of the current page.

35. (Original) The medium of claim 30, wherein the first user changes focus from a first browser window to a second browser window on the first client and the group of commands further comprises a change of focus from the first browser window to the



second browser window by the first user on the first client, such that the synchronization message indicates the change of focus and cobrowsing the web site comprises correspondingly changing focus from a first browser window on the second client to a second browser window of the second client.

36. (Original) The medium of claim 30, wherein first user resizes a browser window on the first client and the group of commands further comprises a resizing of the browser window by the first user on the first client, such that the synchronization message indicates the resizing and cobrowsing the web site comprises correspondingly resizing a browser window on the second client.

37. (Not appealed) A method for cobrowsing a plurality of pages formatted according to one or more markup languages and organized into one or more web sites, comprising:

- initiating a cobrowsing session between a first client and a second client;
- browsing a web site on the first client;
- determining using a document object model an action performed at the first client;
- and
- sending a synchronization message by the first client to the second client, the synchronization message indicating at least one command comprising indications of the determined action and a cookie, the at least one command for causing the second client to cobrowse in accordance with the synchronization message.

**EVIDENCE APPENDIX**

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

**RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.

**APPLICATION APPENDIX**

The following application was downloaded from Public PAIR and represents the Specification, Claims, and Abstract having a Mail Room Date of April 16, 2001. No modifications to the application were made except to add line numbering.

# SPECIFICATION

Electronic Version 1.2.8

Stylesheet Version 1.0

## WEB SITE COBROWSING

### Background of Invention

[0001] This invention relates generally to browsing web sites, and more particularly to two or more users cobrowsing web sites concurrently in a synchronized manner.

[0002] Browsing the Internet's worldwide web (WWW, or the "web") has become a popular and common activity. Information on the web is typically stored in data files referred to as web pages, which may be formatted according to a markup language, such as the HyperText Markup Language (HTML), and the eXtensible Markup Language (XML). The web pages are usually organized into web sites. A computer program or software component, referred to as a web browser, allows the user to navigate different web sites, and view different web pages on those web sites. This activity is referred to generally as web browsing.

[0003] Web browsing has traditionally been a single user experience. A user starts the web browser on his or her computer, or other computing device, and enters in a web site to begin browsing. The general usefulness of web browsing, however, has led some to introduce cobrowsing. In cobrowsing, as one user browses the web with his or her web browser, other users see the same web pages on their web browsers. That is, the latter users' web browsers are synchronized with the former user's web browser. Cobrowsing is useful in many different situations. For example, in electronic commerce, a customer service representative can cobrowse a merchant's web site with a customer. The representative may lead the cobrowsing session, showing the customer where certain products are described on the web site. Alternatively, the customer may lead the cobrowsing session, going to various pages on the web site, and asking the representative questions about the products displayed on those pages.

1 [0004] Another cobrowsing application is distance learning. In distance learning, a  
2 professor may lead a cobrowsing session, such that the students' web browsers are  
3 synchronized with the professor's web browser. When the professor posits a  
4 question to the students, he or she may then select a student to answer the  
5 question, such that the selected student may receive temporary control over the  
6 cobrowsing session. Cobrowsing is also useful for recreational purposes, where  
7 friends may wish to browse the web together. Technical support is another  
8 application for cobrowsing. A technical support adviser can show a user with a  
9 computing problem, for example, where to find help on the web.  
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17 [0005] Current cobrowsing approaches, however, are limited. One common approach  
18 is based on the T.120 conferencing standard. In this conferencing approach to  
19 cobrowsing, the part of the web page that the user who is leading the cobrowsing  
20 session is viewing is saved as a graphics file, such as a bit map file. This graphics  
21 file is then sent to the other users, and displayed. As the lead user navigates  
22 different parts of the same web page, as well as different web pages, graphics files  
23 are continually saved and sent to the other users. This approach is problematic  
24 because a large amount of data must be continually sent. Because most users still  
25 do not have high bandwidth Internet connections, the resulting cobrowsing session  
26 is often very slow. Furthermore, the conferencing approach usually requires that  
27 each user participating in the cobrowsing session have the same conferencing  
28 application, running on the same operating system.  
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38 [0006] Another cobrowsing approach is referred to as the hyperlinks approach. In this  
39 approach, as the lead user of the cobrowsing session navigates different web  
40 pages, the addresses of those web pages, also known as hyperlinks, are sent to the  
41 other users. The web browser of each user downloads the web page independently  
42 of the other users. This approach overcomes the bandwidth problem of the  
43 conferencing approach, since only web page addresses are transferred between the  
44 lead user and the other users. However, the hyperlinks approach is  
45 disadvantageous in that it is not very granular. Many web pages are very large, and  
46 contain a significant amount of information. Usually, a user is interested only in a  
47 part of a web page, such that he or she may have to scroll within the web page so  
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1 that the desired part, containing the desired information, is viewable. Since only  
2 the address of the web page is sent to the other users, however, the lead user has  
3 no way to indicate which part of the web page is of interest. The granularity of the  
4 hyperlinks approach, in other words, is on a web page basis, and does not allow  
5 synchronization on a more granular, partial web page basis.  
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10 [0007] For these and other reasons, there is a need for the present invention.  
11

## 12 Summary of Invention

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14  
15 [0008] The invention relates to cobrowsing web sites. For a cobrowsing session  
16 between a first client of a first user and a second client of a second user, the  
17 cobrowsing session is first initiated. The clients of the users can be computers, or  
18 other computing devices having web browser software components or web browser  
19 computer programs. The first user is initially the leader of the session. He or she  
20 browses a web site on the first client. The first client sends to the second client a  
21 synchronization message. The synchronization message indicates one or more  
22 commands.  
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29 [0009] The commands indicated by the synchronization message can include, among  
30 others:  
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32  
33 [0010] • the current page of the web site being browsed on the first client by the first  
34 user;  
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36  
37 [0011] • the current relative position on the current page being navigated and viewed  
38 by the first user on the first client;  
39

40  
41 [0012] • a portion of the current page as highlighted by the first user on the first  
42 client;  
43

44  
45 [0013] • a change of focus from a first browser window to a second browser window  
46 by the first user on the first client; and,  
47

48  
49 [0014] • a resizing of the current browser window by the first user on the first client.  
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51  
52 [0015] Each of these commands, in other words, indicates a browsing action  
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1 performed by the first user on the first client. The second client receives the  
2  
3 synchronization message, and cobrowses the web site in accordance with the  
4  
5 message and its included commands. Cobrowsing continues until the cobrowsing  
6  
7 session is terminated.

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9 [0016] The invention provides for greater cobrowsing granularity than that afforded by  
10  
11 the prior art. For example, as the first user scrolls within the current web page to  
12  
13 bring an area of interest on the page into view, the synchronization message  
14  
15 indicates this scrolling. This causes the cobrowsing of the web site by the second  
16  
17 client to correspondingly bring the area of interest into view. As another example,  
18  
19 when the user highlights text on the current web page, the synchronization  
20  
21 message indicates this highlighting, causing the cobrowsing of the web site by the  
22  
23 second client to correspondingly highlight the same text.

24  
25 [0017] The first user can transfer control of the cobrowsing session to the second  
26  
27 user. Similarly, the second user can request that control of the cobrowsing session  
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29 be transferred by the first user to him or her. In one embodiment, the cobrowsing  
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31 session is initiated, and synchronization messages transferred, in accordance with  
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33 a preexisting protocol, such as the Session Initiation Protocol (SIP). In another  
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35 embodiment, the cobrowsing session is initiated in accordance with a first  
36  
37 preexisting protocol, and the messages are transferred in accordance with a  
38  
39 second preexisting protocol. For example, the first protocol may be the SIP,  
40  
41 whereas the second protocol may be the Transmission Control Protocol/Internet  
42  
43 Protocol (TCP/IP).

44  
45 [0018] Still other aspects, advantages, and embodiments of the invention, besides  
46  
47 those describe here, will become apparent be reading the detailed description, and  
48  
49 referring to the drawings.

## 50 51 52 Brief Description of Drawings

53  
54 [0019] FIG. 1 is a diagram showing cobrowsing among three users in accordance with  
the invention.

[0020] FIG. 2 is a flowchart of a method showing the general approach for cobrowsing



1 in accordance with the invention.

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3  
4 [0021] FIG. 3 is a diagram of a web page greater in size than that which browser  
5 windows of clients can display.

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7  
8 [0022] FIG. 4 is a diagram of the page layout of a web page as specified in accordance  
9 with the Document Object Model (DOM).

10  
11  
12 [0023] FIG. 5 is a diagram of a system that can implement the invention.

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14 [0024] FIG. 6 is a diagram of an example computerized device in conjunction with  
15 which the invention can be implemented.

## 16 Detailed Description

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21 [0025] In the following detailed description of exemplary embodiments of the  
22 invention, reference is made to the accompanying drawings that form a part  
23 hereof, and in which is shown by way of illustration specific exemplary  
24 embodiments in which the invention may be practiced. These embodiments are  
25 described in sufficient detail to enable those skilled in the art to practice the  
26 invention. Other embodiments may be utilized, and logical, mechanical, electrical,  
27 and other changes may be made without departing from the spirit or scope of the  
28 present invention. The following detailed description is, therefore, not to be taken  
29 in a limiting sense, and the scope of the present invention is defined only by the  
30 appended claims.

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38 [0026] Cobrowsing with increased granularity

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41 [0027] FIG. 1 shows a diagram 100 in which cobrowsing is being performed among  
42 the clients of three users. The client 104 has a web browser program or software  
43 component running thereon, such that a web browser window 106 is currently  
44 being displayed. The client 104 is controlled by a first user, who is presumed to be  
45 the leader of the cobrowsing session. The client 104 is communicatively connected  
46 to the Internet 102. The second client 108, and the third client 112, are also  
47 communicatively connected to the Internet 102. Each of the second client 108 and  
48 the third client 112 also has a web browser program or software component

1 running thereon. Each also has a web browser window currently being displayed.  
2  
3 Specifically, the second client 108 displays the web browser window 110, whereas  
4 the third client 112 displays the web browser window 114. The second client 108  
5 and the third client 112 are controlled by a second user and a third user,  
6  
7 respectively.  
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9

10 [0028] As the first user navigates web pages and web sites, such that different parts  
11 of web pages, different web pages, and different web sites are displayed in the  
12 browser window 106, the windows 110 and 114 are synchronized with the same  
13 information. That is, as the first user browses within the browser window 106,  
14 cobrowsing on the second and third clients 108 and 112 automatically occurs  
15 within the browser windows 110 and 114, respectively. Synchronization messages  
16 are sent from the first client 104 to the second and third clients 108 and 112, so  
17 that the information displayed in the browser windows 110 and 114 are  
18 synchronized with the information displayed in the browser window 106. The first  
19 user of the first client 104 may also transfer control of the cobrowsing session to  
20 either the second user of the second client 108, or the third user of the third client  
21 112.  
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31 [0029] FIG. 2 is a flowchart showing the general method 200 for cobrowsing between  
32 a first user and a second user. The method 200 can be extended for cobrowsing  
33 among more than two users as well. A cobrowsing session between the first client  
34 of the first user and the second client of the second user is initiated (202). The first  
35 user browses a web site on the first client (204). This causes a synchronization  
36 message to be sent from the first client to the second client, to indicate the  
37 browsing by the first user (206). The second client receives the synchronization  
38 message (208), and cobrowsing is accomplished by the second user on the second  
39 client in accordance with the synchronization message (210). Browsing (204),  
40 sending synchronization messages by the first client (206), receiving the messages  
41 by the second client (208), and cobrowsing (210) are repeated (212) until the  
42 cobrowsing session is terminated.  
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51 [0030]  
52 The synchronization message sent from the first client to the second client  
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1 includes one or more commands to indicate the browsing by the first user on the  
2 first client, so that the second user on the second client can cobrowse in a  
3 synchronized manner. One of the commands indicates that the first user has  
4 navigated to a new page of a web site. The synchronization message indicates this  
5 page by its address. When the second client receives the synchronization message,  
6 it causes the current browser window for the cobrowsing session to navigate to  
7 this page as well. If no current browser window for the session is open, then a new  
8 window is first opened before navigating to the new page.  
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15 [0031] Another command indicates that the first user has scrolled within the current  
16 page vertically and/or horizontally on the first client, such that the current relative  
17 position of the current page being navigated and viewed on the first client has  
18 changed. For example, as shown in the diagram 300 of FIG. 3, the web page 302 is  
19 larger, both horizontally and vertically, than the first browser window 320 of the  
20 first client can display. By scrolling horizontally and vertically, the first user  
21 effectively moves the first browser window 320 over different parts of the web  
22 page 302. The synchronization message indicates this change in the current  
23 relative position of the current page being navigated and viewed. When the second  
24 client receives the synchronization message, it causes the browser window of the  
25 second client to likewise scroll to the same relative position. As shown in FIG. 3,  
26 the second browser window 322 of the second client has its top-left corner  
27 synchronized over the web page 302 with the first browser window 320 of the first  
28 client.  
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39 [0032] The web page 302 is made up of a number of constituent markup language  
40 elements 204, 206, 208, 210, 212, 214, 216, and 218. For example, the elements  
41 may be HyperText Markup Language (HTML) elements, eXtensible Markup  
42 Language (XML) elements, or different types of elements. The page layout of these  
43 elements is preferably specified in accordance with a preexisting page layout  
44 specification model, such as the Document Object Model (DOM). DOM is a standard  
45 maintained by the World-Wide Web Consortium, also referred to as W3C. More  
46 information regarding DOM can generally be found at the Internet web site  
47 [www.w3.com/dom](http://www.w3.com/dom). FIG. 4 is a diagram 400 showing how an example web page is  
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1 specified according to DOM. From the root node 402, there are a number of tags  
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3 404, 406, 408, each of which specify a different element. Frames, such as the  
4  
5 frame 410, can also depend from the root node 402, or from other frames. Each  
6  
7 frame also has a number of tags specifying different elements. For example, the  
8  
9 frame 410 has the tags 412 and 414.

10 [0033] To indicate the current relative position that has been scrolled to, therefore,  
11  
12 the synchronization message first identifies one of the tags in the DOM  
13  
14 specification of the current web page. The synchronization message also indicates  
15  
16 the relative position within the element specified by the identified tag, as a  
17  
18 percentage in each of the horizontal and vertical directions. For example, in the  
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20 web page 302 of FIG. 3, the synchronization message would identify the tag for the  
21  
22 markup language element 308, because the upper left-hand corner of the first  
23  
24 browser window 320 is positioned over the element 308. The synchronization  
25  
26 message would also identify the percentage down in the vertical direction of the  
27  
28 position of the window 320 over the element 308, as well as the percentage right  
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30 in the horizontal direction of the position of the window 320 over the element 308.  
31  
32 When the second client receives this synchronization message, it can then position  
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34 its second browser window 322 in the same place over the element 308.

35 [0034] The synchronization of the current relative position of the first browser window  
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37 320 and the second browser window 322 is preferably accomplished relative to the  
38  
39 upper left-hand corners of the windows 320 and 322. This is because the first  
40  
41 client may have a different screen size and resolution than that of the second  
42  
43 client, such that the first client can show more or less information in its browser  
44  
45 window 320 than the second client can in its browser window 322. For example, as  
46  
47 shown in FIG. 3, the first browser window 320 is larger than the second browser  
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49 window 322, indicating that the former has a larger size than the latter. Therefore,  
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51 even when the windows 320 and 322 are synchronized, the window 320 still shows  
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53 more of the web page 302 than does the second window 322.  
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55 [0035]  
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57 The commands included in the synchronization message can also include a  
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59 command indicating that the first user on the first client has highlighted a portion

1 of the current page being navigated and viewed. The granularity in highlighting  
2 that can be achieved is that a single element of the DOM-specified page layout of  
3 the web page can be highlighted. When the second client receives such a  
4 synchronization message, it correspondingly highlights the indicated element.  
5  
6 Another command indicates that the first user has resized the current browser  
7 window on the first client. The resizing is specified by the height and width, in  
8 pixels, of the new size of the window. When the second client receives a  
9 synchronization message specifying resizing, it correspondingly resizes the  
10 browser window on the second client.  
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17 [0036] Where there is more than one browser window on each client in a given  
18 cobrowsing session, usually only one of the browser windows is currently active.  
19 This current browser window is said to have focus. For example, the first user may  
20 have one browser window to show one web page, and another browser window to  
21 show another web page. While browsing, the first user may switch between the  
22 windows. This is referred to as changing the focus from one of the windows to the  
23 other of the windows. When the first user changes window focus while browsing, a  
24 command is sent in the synchronization message to indicate this change in focus.  
25 When the second client receives the synchronization message, it correspondingly  
26 changes the focus between windows as well.  
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34 [0037] Finally, another command that can be included in the synchronization message  
35 is to transfer control of the cobrowsing session from the first user to the second  
36 user. After control has been transferred, the second user becomes the leader of the  
37 cobrowsing session, such that his or her browsing actions are reflected in  
38 synchronization messages sent to the first client. The synchronization messages  
39 cause the cobrowsing activity by the first user on the first client to mirror that of  
40 the second user on the second client. The second client may also request that  
41 control of the cobrowsing session be transferred from the first user to him or her.  
42 If the first user agrees to this request, then control is transferred to the second  
43 user from the first user.  
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51 [0038] Specific implementation of cobrowsing with increased granularity  
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1 [0039] FIG. 5 shows a diagram 500 of parts of a client system, such as a computer or  
2 other computing device, that can implement the invention. Specifically, there is a  
3 web browser process 502, where a process is a computer program or a part of a  
4 computer program. The browser process 502 includes three types of control  
5 software components, or software objects: a navigation control 504, one or more  
6 rendering control(s) 506, and a cobrowse control 508. The navigation control 504  
7 is the primary control of the browser process 502, and allows the user to navigate  
8 web pages. The rendering control(s) 506 render content downloaded by the  
9 navigation control 504. There can be, for example, a different rendering control for  
10 each type of content downloaded, such as one for HyperText Markup Language  
11 (HTML) content, one for eXtensible Markup Language (XML) content, and so on.  
12 The cobrowse control 508 implements the cobrowsing functionality for the browser  
13 process 502.  
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23 [0040] Specifically, where the browser process 502 initiates a cobrowsing session, the  
24 cobrowsing control 508 formulates an invitation and sends it to another browser  
25 (514) through the Session Interface Protocol (SIP) application programming  
26 interface (API) 510. SIP is a protocol for creating, modifying, and terminating  
27 sessions with one or more participants. It is maintained by the Internet Engineering  
28 Task Force (IETF), and further information regarding SIP is located on the Internet  
29 at [www.ietf.org](http://www.ietf.org) in general, and at [www.ietf.org/ids.by.wg/sip.html](http://www.ietf.org/ids.by.wg/sip.html) in particular.  
30 Besides SIP, other preexisting protocols can also be used to establish a cobrowsing  
31 session.  
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39 [0041] Assuming that the invitation is accepted, and that a cobrowsing session  
40 results, synchronization messages can subsequently be sent and received in two  
41 ways. First, the messages may be sent and received through the SIP API 510.  
42 Second, the messages may be sent and received through the Transmission Control  
43 Protocol/Internet Protocol (TCP/IP) 512. Alternatively, a different preexisting  
44 protocol, other than SIP or TCP/IP, may also be used to send and receive messages.  
45 In any case, the messages are ultimately sent to and received from the other  
46 browser over the Internet (514).  
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1 [0042] The initiation of a cobrowsing session using SIP begins with initiation of a SIP  
2 session, with cobrowsing as a new media type in the Session Description Protocol  
3 (SDP) description of the session. SDP is a protocol intended for describing  
4 multimedia sessions for the purposes of session announcement, session invitation,  
5 and other forms of multimedia session initiation. It is also maintained by the IETF,  
6 and further information regarding SDP is located on the Internet at [www.ietf.org](http://www.ietf.org)  
7 in general, and at [www.ietf.org/rfc/rfc2327.txt](http://www.ietf.org/rfc/rfc2327.txt) in particular. Along with the new  
8 media type, the clients can encode in SDP their web browser capabilities. The other  
9 clients can then use this information as desired.

10 [0043] The SDP extension that can be used is as follows. The new media type is  
11 m=cobrowsing. There are also a number of new media attributes.  
12 a=platform:<text> specifies the platform on which the browser program is  
13 running. a=browsertype:<text> and a=browserversion:<text> specifies the type  
14 of browser, and its version, respectively. a=browserheight:<integer> and  
15 a=browserwidth:<integer> specifies the size of the web browser window, height  
16 and width, respectively, in pixels. a=colorsdepth:<integer> specifies the number  
17 of bits per pixel used for colors on the destination device or buffer. Similarly,  
18 a=bufferdepth:<integer> specifies the number of bits per pixel used for colors in  
19 the off-screen bit map buffer. a=noimages specifies whether the images have been  
20 turned on or off in the web browser. If the attribute is absent, then the images are  
21 turned on. If the attribute is present, then the images are turned off. Likewise,  
22 a=cookiesdisabled specifies whether client-side cookies are enabled in the  
23 browser program. If the attribute is absent, they are enabled, and if it is present,  
24 they are disabled. Finally, a=javadisabled specifies whether the Java Virtual  
25 Machine (JVM) is enabled in the browser. If the attribute is absent then the JVM is  
26 enabled, and if it is present, then the JVM is disabled.

27 [0044] The cobrowsing participants can exchange cobrowsing information by sending  
28 SIP requests with a new method, referred to as the cobrowse method. The request  
29 universal resource identifier (URI) is a standard SIP universal resource locator (URL)  
30 identifying the part to which the message is directed. It contains a to field, a from  
31 field, a call-id field, a c-seq number, and a via header. The to field identifies the  
32

1 target of the request. The from field identifies the originator of the request. The  
2  
3 call-id field identifies the cobrowsing session. The c-seq number identifies the  
4  
5 particular request response transaction.  
6

7 [0045] The cobrowse request may also include a win-id header and/or a URI-id  
8  
9 header. The win-id header identifies the browser window in the cobrowsing  
10  
11 session. More particularly, the win-id is a general header used to identify the  
12  
13 browser window on which the specified command is to be implemented. Each  
14  
15 browser window is assigned a unique win-id for identification purposes. The leader  
16  
17 client of the cobrowsing session assigns this id at the time the browser window is  
18  
19 opened. This is done to direct the cobrowsing commands to the correct window.  
20  
21 Both the leader client, as well as the other clients, keep track of the id's, and can  
22  
23 specify them in any cobrowsing command. The win-id for each browser window  
24  
25 should be uniquely defined in the context of one cobrowsing session, and among  
26  
27 all participants. The syntax of the win-id header is: Win-Id = ( "Win-Id" | "W" ) ":"  
28  
29 integer.  
30

31 [0046] The URI-id identifies the URI-cookie pair in the browser window. A cookie  
32  
33 generally is a small data file created by a server, but stored on a client. The URI-id  
34  
35 more particularly is a general header used to identify the URI-cookie pair loaded in  
36  
37 the main browser window. It is an optimization that, in conjunction with the win-id  
38  
39 header, allows the leader client of the cobrowsing session to specify an absolute  
40  
41 context for every command that it sends. Each client builds a map of URI-id's to  
42  
43 URI-cookie pairs as the leader client defines them. By checking the URI-id of a new  
44  
45 command with the URI-id of the currently loaded page, a client can verify whether  
46  
47 the proper web page has been loaded. The URI-id is a unique number in the  
48  
49 context of a given win-id. When a new browser window is opened within a  
50  
51 cobrowsing session, the URI-id is set to zero. As the session progresses, the value  
52  
53 of the URI-id for a particular browser window is incremented by one each time a  
54  
55 new page is loaded in that browser window. The syntax of the URI-id header is:  
56  
57 URI-Id = ("URI-Id" | "U" ) ":" integer.  
58

59 [0047]  
60  
61 The cobrowse request must also contain a body that contains the cobrowse  
62  
63  
64



1 commands, its parameters, and optionally additional context. The body is  
2 formatted in accordance with XML. The syntax of the cobrowse request is:  
3  
4 CoBrowse = "COBROWSE." The following commands are supported: control,  
5  
6 newpage, scroll, highlight, focus, and resize. The syntax of the commands is:  
7  
8 CoBrowsingCmd = "CONTROL" | "NEWPAGE" | "SCROLL" | "HIGHLIGHT" | "FOCUS" |  
9 "RESIZE".  
10

11  
12 [0048] The control command has one text parameter, which can be either REQUEST or  
13  
14 TRANSFER. The control command is used to transfer session control between two  
15  
16 cobrowsing clients. One of the clients is the leader. The other client can ask for  
17  
18 control of the session by sending a control request request. The control is  
19  
20 transferred only after the leader sends a successful control transfer request. The  
21  
22 leader can also voluntarily initiate transfer of the control by sending a control  
23  
24 transfer request.  
25

26  
27 [0049] The newpage command is used by the leader client to load a URI in a browser  
28  
29 window or frame of the other clients. The message body contains the window or  
30  
31 the frame, which loads the new page. The message body also includes the URI  
32  
33 itself, and the cookie, if needed, of the page to be loaded. This command can be  
34  
35 used to load a new page in an already opened browser window, or its frames, or  
36  
37 open a new browser window with the specified page. To open a new browser  
38  
39 window, a new win-id is used.  
40

41  
42 [0050] The scroll command is used by the leader client to scroll a particular web  
43  
44 browser window of the other clients to a certain position. The message body of this  
45  
46 command contains information about the window or frame which that is to be  
47  
48 scrolled. The final position after scrolling is specified by the element in that  
49  
50 window or frame, and by the percent the element needs to be scrolled. Where no  
51  
52 window or frame is specified, the browser window identified by the unique win-id  
53  
54 is used. Where the element is not specified, the window or frame scrolls by the  
55  
56 percentage specified. In the case where no percent is specified, the window is  
57  
58 aligned at the top of the element.  
59

60  
61 [0051] The highlight command is used by the leader client to highlight text in the  
62  
63  
64

1 browser windows of the other clients. The message body of the command contains  
2 information about the window or frame and the element containing the text to be  
3 highlighted. The focus command is used by the leader client to change the browser  
4 window currently in focus at the other clients. Finally, the resize command is used  
5 by the leader client to change the browser window size of the other clients. The  
6 message body includes the new height and width of the window in pixels.  
7  
8  
9

10  
11  
12 [0052] The message body of the method call includes an XML document, which itself  
13 contains a cobrowsing command and its parameters. The XML document is  
14 formatted according to the following XML schema.  
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18 [0053]  
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```

1 <?xml version="1.0" ?>
2 - <!-- Conforms to XML Data subset for IE 5
3 - <Schema name="Cobrowse dtd" xmlns="urn:schemas-microsoft-com:xml-data"
4   xmlns dt="urn:schemas-microsoft-com:datatypes">
5   - <ElementType name="CoBrowseCommand" content="eltOnly" order="one">
6     <element type="CONTROL" />
7     <element type="SCROLL" />
8     <element type="HIGHLIGHT" />
9     <element type="NEWPAGE" />
10    <element type="FOCUS" />
11    <element type="RESIZE" />
12  </ElementType>
13  - <ElementType name="CONTROL" content="empty">
14    <AttributeType name="ControlType" dt type="enumeration" dt:values="Request
15      Transfer" default="Request" />
16    <attribute type="ControlType" />
17  </ElementType>
18  - <ElementType name="SCROLL" content="eltOnly" order="seq">
19    <element type="Context" minOccurs="0" maxOccurs="1" />
20    <element type="NodeIndex" minOccurs="0" maxOccurs="1" />
21    <element type="ScrollPercent" minOccurs="0" maxOccurs="1" />
22  </ElementType>
23  - <ElementType name="HIGHLIGHT" content="eltOnly" order="seq">
24    <element type="Context" />
25    <element type="NodeIndex" />
26  </ElementType>
27  - <ElementType name="NEWPAGE" content="eltOnly" order="seq">
28    <element type="Context" />
29    <element type="URI" />
30    <element type="Cookie" minOccurs="0" maxOccurs="1" />
31  </ElementType>
32  - <ElementType name="FOCUS" content="empty" />
33  - <ElementType name="RESIZE" content="eltOnly" order="seq">
34    <element type="Height" />
35    <element type="Width" />
36  </ElementType>
37  - <ElementType name="Context" content="eltOnly" order="seq">
38    <element type="Frame" minOccurs="0" maxOccurs="*" />
39  </ElementType>
40  - <ElementType name="NodeIndex" content="eltOnly" order="seq">
41    <element type="TagType" />
42    <element type="TagIndex" />
43  </ElementType>
44  - <ElementType name="ScrollPercent" content="eltOnly" order="seq">
45    <element type="TopDownPercent" />
46    <element type="LeftRightPercent" minOccurs="0" maxOccurs="1" />

```

[0054]

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1      <element type="Align" minOccurs="0" maxOccurs="1" />
2      </ElementType>
3      <ElementType name="URI" content="textOnly" dt:type="uri" />
4      <ElementType name="Cookie" content="textOnly" dt:type="string" />
5      <ElementType name="Height" content="textOnly" dt:type="int" />
6      <ElementType name="Width" content="textOnly" dt:type="int" />
7      <ElementType name="TopDownPercent" content="textOnly" dt:type="float" />
8      <ElementType name="LeftRightPercent" content="textOnly" dt:type="float" />
9      <ElementType name="Align" content="empty">
10         <AttributeType name="AlignType" dt:type="enumeration" dt:values="AlignTop
11             AlignBottom AlignCenter" default="AlignTop" />
12         <attribute type="AlignType" />
13     </ElementType>
14     <ElementType name="Frame" content="eltOnly" order="seq">
15         <element type="FrameIndex" />
16         <element type="URICookieId" />
17         <element type="URI" minOccurs="0" maxOccurs="1" />
18         <element type="Cookie" minOccurs="0" maxOccurs="1" />
19     </ElementType>
20     <ElementType name="FrameIndex" content="textOnly" dt:type="int" />
21     <ElementType name="URICookieId" content="textOnly" dt:type="int" />
22     <ElementType name="TagType" content="textOnly" dt:type="string" />
23     <ElementType name="TagIndex" content="textOnly" dt:type="int" />
24 </Schema>

```

[0055] Thus, the leader client first sends a newpage cobrowse command containing the URI and cookie, if necessary, of the web page it is viewing. The win-id contains a uniquely assigned identification for the browser window and the URI-id contains a uniquely assigned identification for the URI-cookie pair. On receiving the newpage command, each of the other clients opens a web browser window, associates it with the received win-id, and navigates it to the specified URI and cookie. These clients also associate the URI-id to this URI-cookie pair for future reference.

[0056] If the main document includes frames, and the frames are navigated to a different URI than their default, the leader client sends a newpage command for each frame that needs to be synchronized. These requests contain the same win-id and uri-id to show that the command is to be applied in the same browser window, with the same main document. The newpage command contains additional context inside the message body that identifies the frame that needs to navigate to a new URI. If the leader client switches to a new URI in the browser window, it sends a newpage command with the same win-id, but with an incremented uri-id to be associated with the new URI-cookie pair.

[0057] The other commands do not change the main document, but rather affect its

1 display. The win-id and uri-id can be used for these commands to identify the  
2 context of the browser window. If the action does not occur inside the main  
3 window, but rather inside one of the frames, they will provide in the message body  
4 additional context containing the frame index and its URI. Any of the clients can  
5 request control of the cobrowsing session by sending a control cobrowse  
6 command with request as the parameter. However, control is only transferred when  
7 the leader sends a control cobrowse command with transfer as the parameter in  
8 response.

14  
15 [0058] Example Computerized Device

16  
17 [0059] FIG. 6 illustrates an example of a suitable computing system environment 10  
18 on which the invention may be implemented. For example, the environment 10 can  
19 be a client that participates in the cobrowsing session. The computing system  
20 environment 10 is only one example of a suitable computing environment and is  
21 not intended to suggest any limitation as to the scope of use or functionality of the  
22 invention. Neither should the computing environment 10 be interpreted as having  
23 any dependency or requirement relating to any one or combination of components  
24 illustrated in the exemplary operating environment 10. In particular, the  
25 environment 10 is an example of a computerized device that can implement the  
26 servers, clients, or other nodes that have been described.

27  
28 [0060] The invention is operational with numerous other general purpose or special  
29 purpose computing system environments or configurations. Examples of well  
30 known computing systems, environments, and/or configurations that may be  
31 suitable for use with the invention include, but are not limited to, personal  
32 computers, server computers, handheld or laptop devices, multiprocessor systems,  
33 microprocessorsystems. Additional examples include set top boxes, programmable  
34 consumer electronics, network PCs, minicomputers, mainframe computers,  
35 distributed computing environments that include any of the above systems or  
36 devices, and the like.

37  
38 [0061] The invention may be described in the general context of  
39 computerinstructions, such as program modules, being executed by a computer.

1 Generally, program modules include routines, programs, objects, components,  
2 data structures, etc. that perform particular tasks or implement particular abstract  
3 data types. The invention may also be practiced in distributed computing  
4 environments where tasks are performed by remote processing devices that are  
5 linked through a communications network. In a distributed computing  
6 environment, program modules may be located in both local and remote computer  
7 storage media including memory storage devices.  
8  
9  
10  
11  
12

13 [0062] An exemplary system for implementing the invention includes a computing  
14 device, such as computing device 10. In its most basic configuration, computing  
15 device 10 typically includes at least one processing unit 12 and memory 14.  
16 Depending on the exact configuration and type of computing device, memory 14  
17 may be volatile (such as RAM), non-volatile (such as ROM, flash memory, etc.) or  
18 some combination of the two. This most basic configuration is illustrated by  
19 dashed line 16. Additionally, device 10 may also have additional  
20 features/functionality. For example, device 10 may also include additional storage  
21 (removable and/or non-removable) including, but not limited to, magnetic or  
22 optical disks or tape. Such additional storage is illustrated in by removable storage  
23 18 and non-removable storage 20.  
24  
25  
26  
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31

32 [0063] Computer storage media includes volatile, nonvolatile, removable, and non-  
33 removable media implemented in any method or technology for storage of  
34 information such as computer readable instructions, data structures, program  
35 modules, or other data. Memory 14, removable storage 18, and non-removable  
36 storage 20 are all examples of computer storage media. Computer storage media  
37 includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory  
38 technology, CDROM, digital versatile disks (DVD) or other optical storage, magnetic  
39 cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices,  
40 or any other medium which can be used to store the desired information and which  
41 can be accessed by device 10. Any such computer storage media may be part of  
42 device 10.  
43  
44  
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49

50 [0064]  
51 Device 10 may also contain communications connection(s) 22 that allow the  
52  
53  
54

1 device to communicate with other devices. Communications connection(s) 22 is an  
2 example of communication media. Communication media typically embodies  
3 computer readable instructions, data structures, program modules, or other data in  
4 a modulated data signal such as a carrier wave or other transport mechanism and  
5 includes any information delivery media. The term "modulated data signal" means  
6 a signal that has one or more of its characteristics set or changed in such a manner  
7 as to encode information in the signal. By way of example, and not limitation,  
8 communication media includes wired media such as a wired network or direct-  
9 wired connection, and wireless media such as acoustic, RF, infrared and other  
10 wireless media. The term computer readable media as used herein includes both  
11 storage media and communication media.  
12  
13  
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15  
16  
17  
18  
19

20 [0065] Device 10 may also have input device(s) 24 such as keyboard, mouse, pen,  
21 voice input device, touch input device, etc. Output device(s) 26 such as a display,  
22 speakers, printer, etc. may also be included. All these devices are well know in the  
23 art and need not be discussed at length here.  
24  
25  
26

27 [0066] The methods that have been described can be computer-implemented on the  
28 device 10. A computer-implemented method is desirably realized at least in part as  
29 one or more programs running on a computer. The programs can be executed  
30 from a computer-readable medium such as a memory by a processor of a  
31 computer. The programs are desirably storable on a machine-readable medium,  
32 such as a floppy disk or a CD-ROM, for distribution and installation and execution  
33 on another computer. The program or programs can be a part of a computer  
34 system, a computer, or a computerized device.  
35  
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40

41 [0067] Conclusion  
42  
43

44 [0068] It is noted that, although specific embodiments have been illustrated and  
45 described herein, it will be appreciated by those of ordinary skill in the art that any  
46 arrangement is calculated to achieve the same purpose may be substituted for the  
47 specific embodiments shown. This application is intended to cover any adaptations  
48 or variations of the present invention. Therefore, it is manifestly intended that this  
49 invention be limited only by the claims and equivalents thereof.  
50  
51  
52  
53  
54

## Claims

- 1  
2  
3 [c1] 1.A method for a first user to cobrowse a plurality of pages formatted  
4 according to one or more markup languages and organized into one or more  
5 web sites with a second user comprising:  
6  
7 initiating a cobrowsing session between a first client of the first user  
8 and a second client of the second user;  
9  
10 browsing a web site on the first client by the first user;  
11  
12 sending a synchronization message by the first client to the second  
13 client, the synchronization message indicating at least one command  
14 selected from the group of commands comprising: a current page of  
15 the web site being browsed on the first client by the first user and a  
16 current relative position on the current page being navigated and  
17 viewed by the first user on the first client;  
18  
19 receiving the synchronization message by the second client; and,  
20  
21 cobrowsing the web site on the second client by the second user in  
22 accordance with the synchronization message.  
23  
24  
25  
26  
27  
28 [c2] 2.The method of claim 1, further comprising repeating browsing on the first  
29 client, sending the synchronization message by the first client, receiving the  
30 synchronization message by the second client, and cobrowsing on the  
31 second client until the cobrowsing session is terminated.  
32  
33  
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35  
36 [c3] 3.The method of claim 1, wherein initiating the cobrowsing session between  
37 the first client of the first user and the second client of the second user is in  
38 accordance with a preexisting protocol.  
39  
40  
41  
42 [c4] 4.The method of claim 3, wherein the preexisting protocol is the Session  
43 Initiation Protocol (SIP).  
44  
45  
46 [c5] 5.The method of claim 1, wherein browsing the web site on the first client by  
47 the first user comprises browsing a new page of the web site, such that the  
48 synchronization message indicates the current page being navigated as the  
49 new page.  
50  
51  
52  
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54



- 1 [c6] 6.The method of claim 5, wherein cobrowsing the web site on the second  
2 client by the second user comprises opening a new browser window for the  
3 current page where no other browser window is open for the cobrowsing  
4 session on the second client.  
5  
6  
7  
8  
9 [c7] 7.The method of claim 1, wherein browsing of the web site on the first client  
10 by the first user comprises scrolling within the current page at least one of  
11 vertically and horizontally such that the current relative position on the  
12 current page being navigated and viewed is changed, such that the  
13 synchronization message indicates the current relative position as changed,  
14 causing cobrowsing the web site on the second client by the second user to  
15 correspondingly scroll within the current page.  
16  
17  
18  
19  
20  
21 [c8] 8.The method of claim 7, wherein the current relative position on the current  
22 page being navigated is indicated in accordance with a preexisting model  
23 specifying page layout.  
24  
25  
26  
27 [c9] 9.The method of claim 8, wherein the preexisting model is the Document  
28 Object Model (DOM).  
29  
30  
31 [c10] 10.The method of claim 1, wherein the group of commands further  
32 comprises a portion of the current page being highlighted by the first user  
33 on the first client, such that the synchronization message indicates the  
34 portion of the current page being highlighted, causing cobrowsing the web  
35 site on the second client by the second user to correspondingly highlight the  
36 portion of the current page.  
37  
38  
39  
40  
41  
42 [c11] 11.The method of claim 1, wherein the group of commands further  
43 comprises a change of focus from a first browser window to a second  
44 browser window by the first user on the first client, such that the  
45 synchronization message indicates the change of focus, causing cobrowsing  
46 the web site on the second client by the second user to correspondingly  
47 change focus from a first browser window on the second client to a second  
48 browser window of the second client.  
49  
50  
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54

- 1 [c12] 12.The method of claim 1, wherein the group of commands further  
2 comprises a resizing of a browser window by the first user on the first client,  
3 such that the synchronization message indicates the resizing, causing  
4 cobrowsing the web site on the second client by the second user to  
5 correspondingly resize a browser window on the second client.  
6  
7  
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9  
10 [c13] 13.The method of claim 1, wherein sending the synchronization message  
11 and receiving the synchronization message are received in accordance with a  
12 preexisting protocol.  
13  
14  
15  
16 [c14] 14.The method of claim 13, wherein the preexisting protocol is one of: the  
17 Session Initiation Protocol (SIP), and the Transmission Control  
18 Protocol/Internet Protocol (TCP/IP).  
19  
20  
21  
22 [c15] 15.The method of claim 1, wherein the synchronization message is  
23 formatted in accordance with an extension to a preexisting protocol.  
24  
25  
26 [c16] 16.The method of claim 15, wherein the preexisting protocol is the Session  
27 Description Protocol (SDP).  
28  
29  
30 [c17] 17.The method of claim 1, further comprising terminating the cobrowsing  
31 session.  
32  
33  
34 [c18] 18.The method of claim 1, further comprising passing control of the  
35 cobrowsing session from the first client of the first user to the second client  
36 of the second user.  
37  
38  
39  
40 [c19] 19.The method of claim 18, wherein the group of commands further  
41 comprises a transfer of control of the cobrowsing session from the first  
42 client to the second client, such that the synchronization message indicates  
43 the transfer of control.  
44  
45  
46  
47 [c20] 20.The method of claim 18, wherein the group of commands further  
48 comprises a request to obtain control of the cobrowsing session by the  
49 second client from the first client, such that the synchronization message  
50 indicates the request to obtain control.  
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[c21]

21.The method of claim 18, further comprising:

browsing a web site on the second client by the second user;  
sending a synchronization message by the second client to the first  
client, the synchronization message indicating at least one command  
selected from the group of commands comprising: a current page of  
the web site being browsed on the second client by the second user  
and a current relative position on the current page being navigated  
and viewed by the second user on the second client;  
receiving the synchronization message by the first client; and,  
cobrowsing the web site on the first client by the first user in  
accordance with the synchronization message.

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[c22]

22.The method of claim 21, further comprising repeating browsing on the  
second client, sending the synchronization message by the second client,  
receiving the synchronization message by the first client, and cobrowsing on  
the first client until the cobrowsing session is terminated.

[c23]

23.A computer-readable medium having a computer program stored thereon  
for execution by a processor of a first client to perform a method for a first  
user to cobrowse a plurality of pages formatted according to one or more  
markup languages and organized into one or more web sites with a second  
user, the method comprising:

initiating a cobrowsing session between the first client of the first user  
and a second client of the second user;  
browsing a web site on the first client by the first user; and,  
sending a synchronization message by the first client to the second  
client, the synchronization message indicating at least one command  
selected from the group of commands comprising: a current page of  
the web site being browsed on the first client by the first user and a  
current relative position on the current page being navigated and  
viewed by the first user on the first client,  
wherein the second client receives the synchronization message and  
cobrowses the web site in accordance with the synchronization

message.

- [c24] 24.The medium of claim 23, wherein the method further comprises repeating browsing the web site and sending the synchronization message until the cobrowsing session is terminated.
- [c25] 25.The medium of claim 23, wherein browsing the web site on the first client by the first user comprises browsing a new page of the web site, such that the synchronization message indicates the current page being navigated as the new page.
- [c26] 26.The medium of claim 23, wherein browsing of the web site on the first client by the first user comprises scrolling within the current page at least one of vertically and horizontally such that the current relative position on the current page being navigated and viewed is changed, such that the synchronization message indicates the current relative position as changed, causing cobrowsing the web site on the second client by the second user to correspondingly scroll within the current page.
- [c27] 27.The medium of claim 23, wherein the group of commands further comprises a portion of the current page being highlighted by the first user on the first client, such that the synchronization message indicates the portion of the current page being highlighted, causing cobrowsing the web site on the second client by the second user to correspondingly highlight the portion of the current page.
- [c28] 28.The medium of claim 23, wherein the group of commands further comprises a change of focus from a first browser window to a second browser window by the first user on the first client, such that the synchronization message indicates the change of focus, causing cobrowsing the web site on the second client by the second user to correspondingly change focus from a first browser window on the second client to a second browser window of the second client.
- [c29] 29.The medium of claim 23, wherein the group of commands further

1 comprises a resizing of a browser window by the first user on the first client,  
2 such that the synchronization message indicates the resizing, causing  
3  
4 cobrowsing the web site on the second client by the second user to  
5  
6 correspondingly resize a browser window on the second client.  
7

8  
9 [c30] 30.A computer-readable medium having a computer program stored thereon  
10 for execution by a processor of a second client to perform a method for a  
11 second user to cobrowse a plurality of pages formatted according to one or  
12 more markup languages and organized into one or more web sites with a  
13 first user, the method comprising:  
14

15  
16 initiating a cobrowsing session between a first client of the first user  
17 and the second client of the second user;  
18  
19 receiving a synchronization message by the second client from the  
20 first client, the synchronization message indicating at least one  
21 command selected from the group of commands comprising: a current  
22 page of the web site being browsed on the first client by the first user  
23 and a current relative position on the current page being navigated  
24 and viewed by the first user on the first client; and,  
25  
26 cobrowsing the web site on the second client by the second user in  
27 accordance with the synchronization message.  
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34 [c31] 31.The medium of claim 30, wherein the method further comprises  
35 repeating receiving the synchronization message and cobrowsing the web  
36 site until the cobrowsing session is terminated.  
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40 [c32] 32.The medium of claim 30, wherein the first user browses a new page of  
41 the web site on the first client, such that the synchronization message  
42 indicates the current page being navigated as the new page, and cobrowsing  
43 the web site comprises cobrowsing the new page.  
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47 [c33] 33.The medium of claim 30, wherein the first user scrolls within the current  
48 page at least one of vertically and horizontally on the first client such that  
49 the current relative position on the current page being navigated and viewed  
50 is changed, such that the synchronization message indicates the current  
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1 relative position as changed, and cobrowsing the web site comprises  
2 correspondingly scrolling within the current page.  
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5 [c34] 34.The medium of claim 30, wherein the first user highlights a portion of the  
6 current page on the first client and the group of commands further  
7 comprises the portion of the current page being highlighted by the first user  
8 on the first client, such that the synchronization message indicates the  
9 portion of the current page being highlighted and cobrowsing the web site  
10 comprises correspondingly highlighting the portion of the current page.  
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16 [c35] 35.The medium of claim 30, wherein the first user changes focus from a first  
17 browser window to a second browser window on the first client and the  
18 group of commands further comprises a change of focus from the first  
19 browser window to the second browser window by the first user on the first  
20 client, such that the synchronization message indicates the change of focus  
21 and cobrowsing the web site comprises correspondingly changing focus  
22 from a first browser window on the second client to a second browser  
23 window of the second client.  
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30 [c36] 36.The medium of claim 30, wherein first user resizes a browser window on  
31 the first client and the group of commands further comprises a resizing of  
32 the browser window by the first user on the first client, such that the  
33 synchronization message indicates the resizing and cobrowsing the web site  
34 comprises correspondingly resizing a browser window on the second client.  
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# WEB SITE COBROWSING

## Abstract of Disclosure

Cobrowsing web sites by two or more users is disclosed. For a cobrowsing session between a first client of a first user and a second client of a second user, the cobrowsing session is first initiated. The first user browses a web site on the first client. The first client sends to the second client a synchronization message. The synchronization message indicates one or more commands reflecting the browsing performed by the first user. The second client receives the synchronization message, and cobrowses the web site in accordance with the message and its included commands. Cobrowsing continues until the cobrowsing session is terminated. The commands of the synchronization message allow for fine granularity of cobrowsing.

## Figures

Figure 1: A line graph showing the relationship between the concentration of a solution and its refractive index. The x-axis represents concentration in g/100 ml, ranging from 0 to 10. The y-axis represents refractive index, ranging from 1.00 to 1.10. The data points show a linear increase in refractive index with increasing concentration.



FIG 1

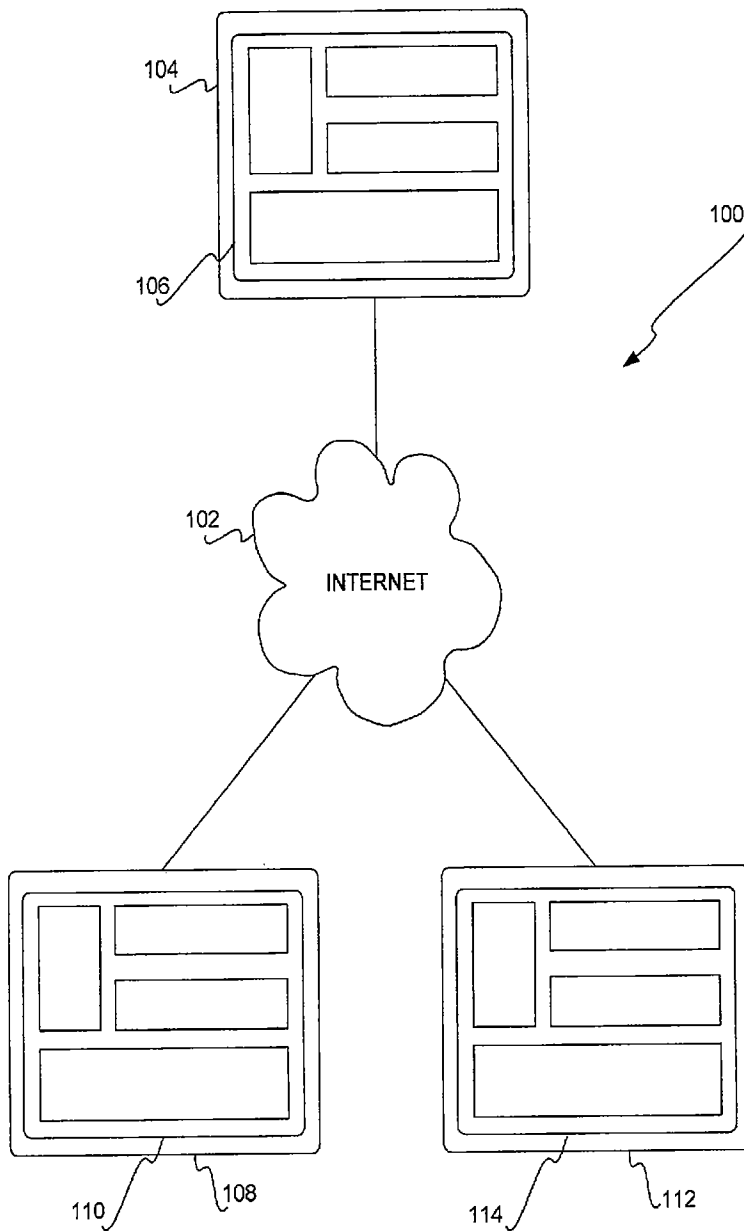


FIG 2

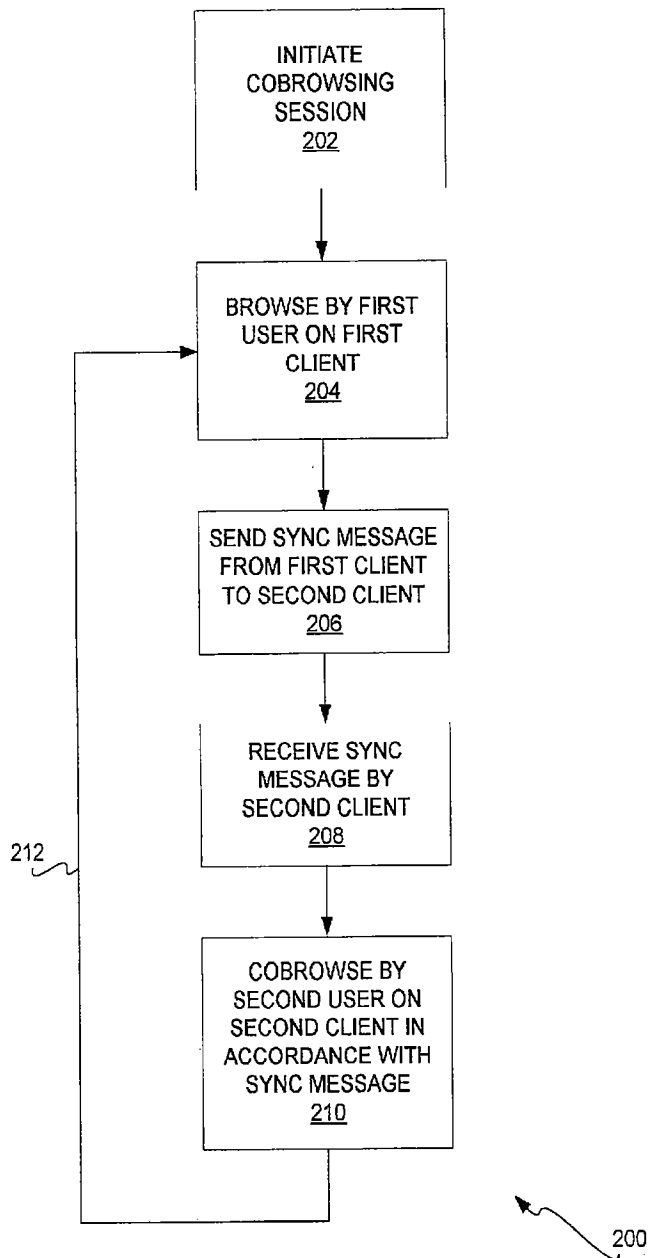


FIG 3

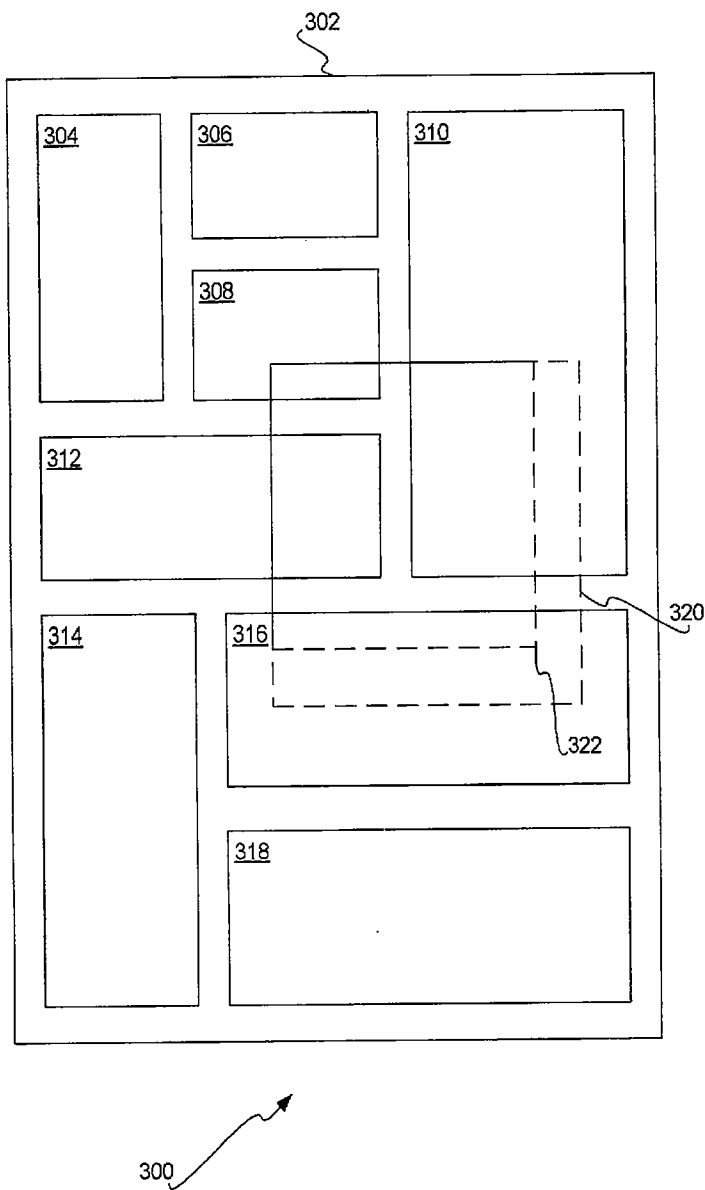


FIG 4

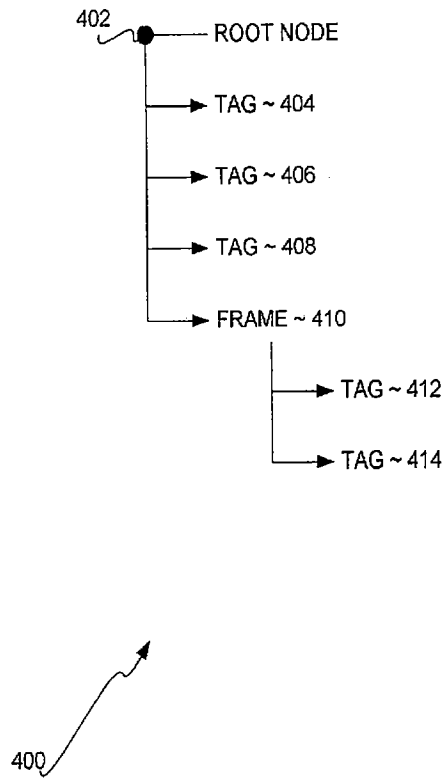


FIG 5

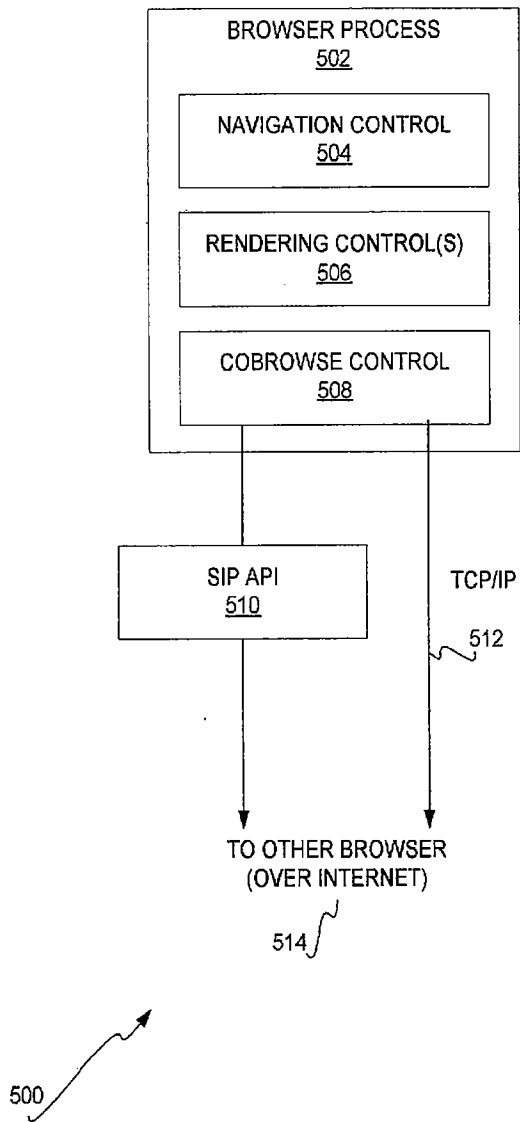


FIG 6

